

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) An isolated nucleic acid encoding a polypeptide monomer comprising an alpha subunit of a potassium channel, the polypeptide monomer:

(i) forming, with at least one additional Kir alpha subunit, a potassium channel having the characteristic of inward rectification; and

(ii) encoded by a nucleic acid that selectively hybridizes under highly stringent hybridization conditions to a nucleotide sequence of SEQ ID NO:2, wherein the stringent conditions comprise incubation at 42°C in a solution comprising 50% formamide, 5 x SSC, and 1% SDS or an incubation at 65°C in a solution comprising 5 x SSC and 1% SDS at 65°C with a wash in 0.2 x SSC and 0.1% SDS.

2. (Original) The isolated nucleic acid of claim 1, wherein the nucleic acid encodes human Kir5.1.

3. (Original) The isolated nucleic acid of claim 1, wherein the nucleic acid encodes SEQ ID NO:1.

4. (Original) The isolated nucleic acid sequence of claim 1, wherein the nucleic acid has a nucleotide sequence of SEQ ID NO:2.

5. (Canceled)

6. (Previously presented) The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer having a molecular weight of about between 38 kDa to 48 kDa, wherein the molecular weight is predicted based on amino acid sequence.

7. (Original) The isolated nucleic acid of claim 1, wherein the polypeptide monomer comprises an alpha subunit of a heteromeric inward rectifier potassium channel.

8-35. (Canceled)